

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
 CP2/5C24  
 Arlington, VA 22202  
 ETATS-UNIS D'AMERIQUE  
 in its capacity as elected Office

<b>Date of mailing</b> (day/month/year) 04 July 2001 (04.07.01)	
<b>International application No.</b> PCT/US00/24915	<b>Applicant's or agent's file reference</b> 44599
<b>International filing date</b> (day/month/year) 08 September 2000 (08.09.00)	<b>Priority date</b> (day/month/year) 23 September 1999 (23.09.99)
<b>Applicant</b> HILL, Martin, F. et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
 22 March 2001 (22.03.01)

☐ in a notice effecting later election filed with the International Bureau on:  
 \_\_\_\_\_

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

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The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer F. Baechler Telephone No.: (41-22) 338.83.38
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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference 44599	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US00/24915	International filing date (day/month/year) 08/09/2000	Priority date (day/month/year) 23/09/1999
International Patent Classification (IPC) or national classification and IPC C08J3/09		
Applicant THE DOW CHEMICAL COMPANY et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
  - ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 22/03/2001	Date of completion of this report 21.11.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Gerber, M  Telephone No. +49 89 2399 8528 

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/US00/24915

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, pages:**

1-19 as originally filed

**Claims, No.:**

1-12 with telefax of 11/10/2001

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/US00/24915

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes:	Claims	1-12
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-12
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-12
	No:	Claims	

2. Citations and explanations  
**see separate sheet**

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Reference is made to the following documents:

- D1:** US-A-4 720 569 (TOMINAGA AKIRA) 19 January 1988
- D2:** US-A-5 449 474 (HALAR ZELJKO E ET AL) 12 September 1995
- D3:** DATABASE WPI Section Ch, Week 198450 Derwent Publications Ltd., London, GB; Class E19, AN 1984-310532 XP002155071 ANONYMOUS: 'Solvent for graffiti removal - comprises glycol ether, alkyl carbonate and alcohol' & RESEARCH DISCLOSURE, vol. 247, no. 030, 10 November 1984, Emsworth, GB
- D4:** WO 89 11526 A (BOEING CO) 30 November 1989 (1989-11-30)
- D5:** WO 99 39581 A (HUNTSMAN SPEC CHEM CORP) 12 August 1999
- D6:** US-A-5 298 081 (MARQUIS EDWARD T) 29 March 1994

**1. Article 33(2) PCT**

Document D3, which is considered to represent the most relevant state of the art, discloses a solvent for graffiti removal comprising:

- a) 20-60 wt.% of a glycol ether like propylene glycol methyl ether,
- b) 20-60 wt.% of an alkyl carbonate like propylene, ethylene or methylene carbonate, and
- c) 10-30 wt.% of an alcohol, preferably a 1-4C-alcohol.

and differs from the subject-matter of claim 1 in the proportions of components used.

The subject-matter of **claims 1-12** is therefore novel over the available state of the art.

**2. Article 33(3) PCT**

**2.1.** The problem to be solved by the present invention may therefore be regarded as to find a solvent composition suitable for keeping dicyandiamide in solution after the curing agent solution containing it has been mixed with the epoxy resin solution.

The solution proposed in **claim 1** of the present application involves an inventive step

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/US00/24915

since none of the prior art documents, taken alone or in combination, suggests to use a glycol monoether and an organic low molecular weight compound containing a carbonate group in the proportions as claimed in claim 1.

Moreover, the Applicant has carried out comparative tests which prove that the selection of this particular range of values leads to a surprising technical effect which is to keep the dicyandiamide in solution after the dicyandiamide curing solution has been mixed with the epoxy resin solution (see table I).

Accordingly, the subject-matter of **claim 1 and dependent claims 2-7** is deemed to be inventive.

**2.2.** The epoxy resin compositions of **claims 8-10** containing the claimed solvent composition, the method for preparing it claimed in **claim 11** and the use thereof claimed in **claim 12** are inventive.

**3. Article 33(4) PCT**

The subject-matter of present **claims 1-12** is industrially applicable.

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 00/24915

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 C08J3/09 C08G59/40

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 C08J C08G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 720 569 A (TOMINAGA AKIRA) 19 January 1988 (1988-01-19) claims; examples	1-12
X	US 5 449 474 A (HALAR ZELJKO E ET AL) 12 September 1995 (1995-09-12) claims; examples	1-9

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \* & \* document member of the same patent family

Date of the actual completion of the international search

11 December 2000

Date of mailing of the international search report

21/12/2000

Name and mailing address of the ISA

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/24915

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE WPI Section Ch, Week 198450 Derwent Publications Ltd., London, GB; Class E19, AN 1984-310532 XP002155071 ANONYMOUS: "Solvent for graffiti removal - comprises glycol ether, alkyl carbonate and alcohol" abstract & RESEARCH DISCLOSURE, vol. 247, no. 030, 10 November 1984 (1984-11-10), Emsworth, GB	1-9
X	WO 89 11526 A (BOEING CO) 30 November 1989 (1989-11-30) page 6, line 1 - line 21; claims	1-9
X	WO 99 39581 A (HUNTSMAN SPEC CHEM CORP) 12 August 1999 (1999-08-12) claims; examples	1-9
X	US 5 298 081 A (MARQUIS EDWARD T) 29 March 1994 (1994-03-29) claims; example 23	1-9
A	EP 0 423 780 A (GVT GIESSEREI VERFAHRENS TECHN) 24 April 1991 (1991-04-24) page 1, line 37 - line 43; claims	1,10



# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/24915

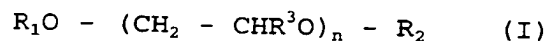
Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4720569	A	19-01-1988	JP 61036319 A DE 3577871 D EP 0172685 A	21-02-1986 28-06-1990 26-02-1986
US 5449474	A	12-09-1995	US 5665690 A	09-09-1997
WO 8911526	A	30-11-1989	US 5007969 A CA 1324064 A EP 0414754 A JP 3505339 T US 5690747 A US 5098594 A US 5204026 A	16-04-1991 09-11-1993 06-03-1991 21-11-1991 25-11-1997 24-03-1992 20-04-1993
WO 9939581	A	12-08-1999	EP 1052902 A	22-11-2000
US 5298081	A	29-03-1994	CA 2054235 A EP 0485063 A JP 4359006 A	20-05-1992 13-05-1992 11-12-1992
EP 0423780	A	24-04-1991	DE 3934940 A US 5275648 A	25-04-1991 04-01-1994

CLAIMS:

1. A solvent composition comprising  
a) a glycol monoether or diether and  
b) an organic low molecular weight compound containing a  
5 carbonate group.

2. The solvent composition of Claim 1 additionally comprising c) a protic liquid other than a glycol monoether or diether.

3. The solvent composition of Claim 1 or Claim 2 wherein  
10 component a) is a propylene or butylene glycol monoether represented by Formula I



wherein

one of the substituents  $R_1$  and  $R_2$  is an alkyl group having  
15 from 1 to 12 carbon atoms and the other of the substituents  $R_1$  and  $R_2$  is hydrogen,

$R^3$  in each occurrence independently is methyl or ethyl and  
n is from 1 to 4.

4. The solvent composition of Claim 3 wherein in  
20 Formula I one of the substituents  $R_1$  and  $R_2$  is an alkyl group having from 1 to 4 carbon atoms and the other of the substituents  $R_1$  and  $R_2$  is hydrogen,  $R^3$  in each occurrence is methyl and n is 1, 2 or 3.

5. The solvent composition of any one of Claims 1 to 4  
wherein component b) is butylene carbonate, propylene carbonate or  
25 ethylene carbonate.

6. The solvent composition of any one of Claims 2 to 5  
wherein component c) is water.

7. The solvent composition of any one of Claims 1 to 6 comprising a) a propylene glycol monoether, b) propylene carbonate and c) water.

8. The solvent composition of any one of Claims 1 to 6 comprising a) a propylene glycol monoether and b) ethylene carbonate.

9. The solvent composition of any one of Claims 2 to 8 comprising at least 45 percent of component a),

from 1 to 30 percent of the component b) and

from 0 to 25 percent of component c), based on the total weight of a), b) and c).

10. A composition comprising one or more compounds selected from

i) epoxy resins,

ii) curing agents for an epoxy resin,

iii) curing catalysts, and

iv) cure inhibitors,

in a solvent composition set forth in any one of claims 1 to 9.

11. A method of preparing a composition comprising one or more compounds selected from

i) epoxy resins,

ii) curing agents for an epoxy resin,

iii) curing catalysts, and

iv) cure inhibitors,

in a solvent composition by contacting one or more such compounds with

a) a glycol monoether or diether and

b) an organic low molecular weight compound containing a carbonate group.

12. Use of

5

a) a glycol monoether or diether and

b) an organic low molecular weight compound containing a carbonate group

as a diluent for one or more compounds selected from

i) epoxy resins,

10

ii) curing agents for an epoxy resin,

iii) curing catalysts, and

iv) cure inhibitors.